

# AMATEUR RADIO



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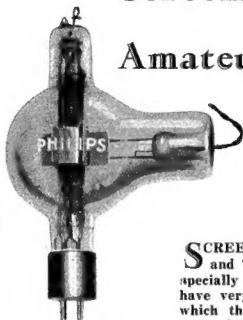
Should you not receive your copy of "Amateur Radio," notify your Divisional Secretary at once.

1st May, 1934.

# Screen Grid Valves

For

## Amateur Transmitters



1/4 of actual size.

Types:

QB 2/75, QC 05/15

**SCREEN GRID** Transmitting Valves for 15 and 75 watts have been designed by Philips specially for use by amateurs. These valves have very important properties, as a result of which the construction and adjustment of the transmitter can be greatly simplified. The control-grid and anode of these valves are screened from each other by a screen-grid, thus reducing anode-control grid capacity to a minimum. When used as H.F. amplifier or frequency multiplier in controlled transmitters there is practically no reaction of the anode circuit on the grid circuit, and self-oscillation is impossible with screening outside the valve. Neutralisation is unnecessary, so it is very easy to alter the wave-length at short notice. These screen-grid valves give greater amplification than triodes under the same conditions.

Table A shows the various electrical properties of the Philips amateur transmitting valves:—

### CHARACTERISTICS:

Table A. Type.	Screen Grid Valves.	
	QC 05/15.	QB 2/75
Filament voltage . . . . .	4.0	10.0
Filament current* . . . . .	1	3.25
Saturation current* . . . . .	400	2,000
Anode voltage . . . . .	400-500	250
Screen grid voltage . . . . .	75-125	30-50
Max. anode dissipation . . . . .	15	75
Anode dissipation on test . . . . .	20	100
Max. screen grid dissipation . . . . .	3	5
Amplification factor* . . . . .	225	90
Mutual conductance (slope)* . . . . .	1.4	0.4
Int. resistance* . . . . .	160,000	150,000
Anode-grid capacity . . . . .	.001	.02
Max. diam of bulb . . . . .	50	70
Max. length . . . . .	160	210

\*Approximate values.

# PHILIPS

## TRANSMITTING VALVES

## EDITORIAL

Now that "Amateur Radio" has been in existence some months, and the machinery of organisation is running smoothly, we have an opportunity of looking around in order to see how best we can improve the general standard of our magazine. We are modestly proud of "Amateur Radio" as it is, but our policy, as surely every live institution's should be, is one of progression, and so we are seeking ways of improving our product.

A periodical such as ours can be divided into five sections for the purpose of analysis, when one is considering, as we are, a general improvement throughout its pages:—

1. Technical Articles.
2. Divisional Notes.
3. Advertisements.
4. Circulation.
5. Compilation.

On studying these five sections, it can be seen that only the fifth is a specialised job which can be done solely by the men in the city of production. All other sections are general and Interstate in character, and to preserve the federal nature of our magazine it is essential that each division feels an equal responsibility in the collection of "meat" for the pages.

Briefly examining each of these four sections, a word about each will not be out of place. The notes which are sent in monthly by all divisions leave nothing to be desired, either in quality or quantity. It would be no exaggeration to say that we could easily fill 50 pages a month with the interesting, readable notes which come in from all parts of the Commonwealth. Quite frequently half of the notes sent in have to be cut in order

to give everyone fair representation in the pages. The amount of space allotted to each division's notes is in direct proportion to the circulation of that division. Thus every ham can see that, if he desires more of his own division's notes each month, the remedy is in his own hands to help to increase his State's circulation.

The magazine must be a commercially paying proposition, and in consequence it is impossible to enlarge its pages without a coincident increase in advertisements and/or circulation. Every ham in Australia should be a subscriber to his own magazine, which is produced for him and in his own interests. We are leaving no stone unturned in Victoria to see that every licensed amateur is a subscriber—are all other divisions doing the same?

With regard to technical articles, we venture to say that there is not a ham who has not introduced some feature, however big or small, into his station which would not make interesting reading. To preserve the federal character in the pages we don't want articles from VK3 all the time. Write up a description of that new receiver, transmitter, or unusual piece of gear and let us do the rest.

Finally, regarding the compilation of the magazine, we have gone into the subject very closely, and have many new ideas and features. Our readers will, no doubt, notice these immediately they appear. Criticism and constructive ideas are not only welcome, but are essential if our policy of progression is to be faithfully carried out. We want to feel, as we want every reader to feel, that each issue is a decided improvement upon its predecessor. This is an all-Australian job. How about it?

# Frequency

By "VK3ML."

In common amateur practice there are three types of doubling systems employed—(a) plate distortion, (b) grid distortion, (c) unbalanced push-pull. The three cannot be mixed in any manner. Let us consider the plate current-grid voltage curve of a single-ended amplifier for a moment. Under ideal conditions, and assuming we apply a pure sine wave to the grid we can expect an identical output in the plate circuit, and the plate current will be working on the straight portion of its curve. The output will show a linear relation between grid voltage and plate current. Under these circumstances we could not expect to obtain any harmonics generated in the tank circuit. Now, as we already know, a high grid bias on a tube presents distortion in the output. Consequently, if to the grid of this tube we apply a high negative DC voltage, more than is required for a complete cut-off, but still maintaining a pure sine wave on the grid, we find that the output has changed completely. It ceases to bear a relation to the input, that is, the linear grid voltage-plate current curve has been completely cut up and "humps" appear. This has produced our harmonics. The output is represented somewhat in Fig. 4 under VI. If we offer a high impedance to the harmonic desired in the plate circuit we then have a voltage set up in that tank. This explains the reason for the necessity of a high L in doubler tanks. The higher the L, the greater the impedance, and consequently the greater the voltage developed.

The foregoing describes, briefly, the action of a plate-distortion doubler-amplifier. That is, where we employ a pure, or nearly pure, sine wave, to the grid of the multiplying tube, biased beyond cutoff, and collect the desired harmonic output in the plate tank. This stage should be operated at as high a plate voltage as the components will permit, with sufficient bias to keep the tube cool. In order to obtain this nearly pure sine wave it is necessary to apply a harmonic free signal from the oscillator or preceding stage. This is best obtained

by using a fairly high C in the CO stage, and by adjusting the bias on that stage for maximum fundamental output. Naturally, under these conditions there should be an absence of grid current, or very little present, in the doubler. If any be present then something is wrong or the tube is acting as a grid distortion amplifier doubler.

It would seem that many of F.D.'s now employed act under this system. Should your doubler be full of self-oscillation then you may assume, with fair certainty, that you are bordering on this type. For its function a grid distortion amplifier requires non-linearity between grid current and grid voltage. Whenever the grid voltage is allowed to run positive one must always expect a grid current to flow. Now, this grid current is not a steady flow; it comes in impulses, and is therefore rich in harmonics. Consequently, if a high impedance to the desired harmonic is inserted in the grid circuit of the doubler, in the form of a tuned tank then a voltage will be set up across it. Now, if the plate tank is tuned to the same harmonic frequency, the tube works as an ordinary amplifier. Should the grid and plate circuits be tuned to the same frequency, it is obvious that, unless neutralisation is employed, one must expect self-oscillation. That is where so much self oscillation in F.D. stages can come from. The only remedy would be to neutralise the stage, which, by the way, is advantageous in any doubler system, or by adopting the plate distortion system entirely, in which the grid and plate circuits are working at different frequencies. To prove which system one is using just place a milliammeter in the grid circuit of the F.D.; if grid current is present, then the tube is certainly not acting as a plate distortion doubler.

Fig. 1 shows a typical inductively coupled amplifier working as a plate distortion one. The grid is tuned to the fundamental of the previous stage, and the output to the desired harmonic. Fig. 2 depicts a commonly used CO hookup and doubler, whose operation a few years ago gave rise



to much discussion. Surely this circuit is a good example of grid distortion. The fundamental of the oscillator is tuned by the C, and that part of the L across it. The top part of L, untuned, is offering maximum impedance to the harmonic, and consequently sets up a voltage at the harmonic frequency in an auto-transformer fashion. This is applied to the grid of the doubler, and the plate is tuned to the same frequency; hence a grid distortion amplifier, making available many snags, self-oscillation, etc. However, the two systems are only single-ended amplifiers, and consequently one could not expect an efficiency of much over 25 per cent. This

valve is always in such a phase as to prevent them. However, once a P.P. stage loses its symmetry its value as an even harmonic free amplifier is gone. As soon as one unbalances a carefully balanced P.P. arrangement the story, from the point of view of frequency doubling, is a different one. In the case of a single-ended amplifier doubler the plate receives an impulse only on every other cycle. Now assume we have two tubes, the grids connected in P.P. and biased to slightly beyond cut-off, and the outputs connected in parallel, as in Fig. 3. Here we have a common plate tank receiving an impulse every cycle of its swing. This is il-

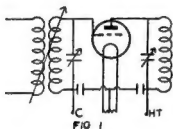


FIG 1

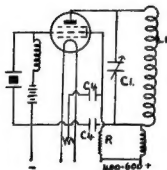


FIG 3

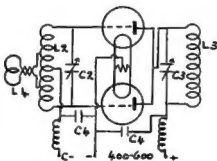


FIG 4

leads to the possibilities of push-pull doubler systems.

It is a well-known fact that push-pull amplifiers are of little or no value when it comes to frequency. Of course, they are most desirable for tripling or odd harmonic multiplication. But for average ham use we need the second harmonic. It is not intended to wade into the theory of push-pull here, but let it be said that the absence of even harmonics in the output of such a stage is due to the differential arrangement of the two tubes, and the impulse from the second

illustrated in Fig. 4, V1 and V2 representing the two tubes and the output is shown as a combination of both. This produces full wave rectification, and offers an infinitely better doubling system than a single-ended stage. However, this system is only to be recommended for the lower frequencies and not the highs, because when the balance of the push-pull has been lost the efficiency drops off. Another and better method of unbalancing push-pull, which is very suitable for high frequencies, is to simply disconnect the filament lead of one of the tubes in a pure push-pull circuit. The

same would be arrived at by using a burned-out tube in one of the sockets. By doing this the balance and symmetry of the stage is fairly even. However, for the popular frequency bands the parallel plate system is to be recommended. Fig. 3 shows a completely wired up transmitter using a penthode as oscillator and two "whatever you like" tubes in the doubler stage. 210, TCO4/10, E443, etc., tubes are suitable. The high mu tubes are preferable as doublers at any time. The operation is very simple, seeing that no neutralisation is required. Matched impedance line coupling is finding value in hamdom these days, and has much to be recommended. With it one can obtain power outputs that far exceed those obtainable with capacity coupling. Should a neutralised amplifier be added to this doubler it is suggested that feed line coupling be used again. However, a pair of 210s or E443s in the doubling stage and connected directly to the aerial will provide a ham with as much power as our licence will permit. Simplicity and easy operation is thereby obtained. Although not shown here, the oscillator could be of the electron coupled type, or, better still, of the harmonic oscillator CC type, as described in the November issue. With either system a fine all-band transmitter could be built at a very small cost.

The operation and tuning of the push-pull doubler stage is certainly not complicated. The aid of a grid milliammeter is desirable when tuning up with the matched impedance line feed system. One reading 0.10 or 0.25 mas will do. Tune the C.O. stage to maximum output firstly, and then couple the two turn feed coil loosely to the cold end of the oscillator tank coil. The ends of L4 are connected each one or two turns from the centre of L2. Retune C1, and transfer the power to the doubler by tuning C2 until the grid current shows maximum. A combination of coupling and tapping of L4 into L2 will give maximum drive. Increase the bias on the doubler stage to a little more than cut off and apply the H.T. Then the rest is simple. Tune C3 until the harmonic required shows up in the tank. The aerial could be connected to the top end of L3, or another feed line attached to an amplifier stage.

Little trouble should be encountered in the operation of the doubler stage.

The most likely to be met with would be self-oscillation, or, rather, parasitic oscillations. These can be overcome by inserting small chokes of 5 or 6 turns in each grid lead. Remember to keep the plate connections as short as possible for greatest efficiency. If it is desired to operate the push-pull stage as an amplifier of the fundamental input it is only necessary to change the plate connections over to push-pull and neutralise in the conventional way, that is, with condensers across from the grid of one tube to the plate of the other. As a pure doubler the constants listed below are used when multiplying a 3.5 mc crystal to 7 mc.

L2 30 turns 18 gauge on a 2½ in. former.

L3 16 turns ½ in. copper tube 2½ in. diam.

L4 2 turns 18 gauge on a 3 in. former coupled with flex to L2.

C2 and C3 100 mfd.

C4 0.01 mfd.

R 50-100,000 ohms according to type of tube used.

## DIRECTIONAL AERIALS.

By "VK3ML," Tech. Editor.

The following figures should prove invaluable to those who are experimenting with directional aerials, especially on 56 and 28 mcs. These compass bearings are accurate to within one degree when used around Melbourne. Other States will have to allow slightly for their position.

These figures are hard to procure, and should be treasured. We are indebted to the Air Board for this information.  
Melbourne to—

Calcutta, 300 deg.  
Ceylon, 284 deg.  
Cape Town, 212 deg.  
Cairo, 276 deg.  
London, 129 deg., by S.E. route.  
London, 309 deg., by N.W. route.  
Berlin, 306 deg.  
Vancouver, 38 deg.  
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Wellington, 100 deg.  
Equador (Quito), 111 deg.  
Buenos Aires, 148 deg.  
California (Los Angeles), 55 deg.  
New York, 60 deg.  
Montreal (Quebec), 51 deg.

## Your Transmitter for the Centenary

By VK3WL.

Although we have ventured the opinion that the transmitter is the least important item of our equipment, we must not lose sight of the fact that it supplies the energy to our most important unit, "the antennae." The chain is only as strong as its weakest link, therefore, we have to decide on a really efficient transmitter. Shall it be controlled or self-excited? Personally, I took quite a lot of convincing of the superiority of the crystal-controlled transmitter. Purity of signal and cleanness of note are pleasing and advantageous, but my main interest is the ability of a station to produce field-strength at really DX ranges, and from that angle I say, after years of testing and experiment, to those in doubt S.E. or C.C.? The sooner you forget about S.E. the better for all concerned. I do think the P.M.G.'s Department could well make controlled transmitters compulsory mainly for the protection of misguided hams. Such action would save us all the agony of listening to some of those strange noises which are often reported "FB to copy OM." If you and I gave nothing but honest reports for 12 months and handed out the T2, 3, 4 and 7's deserved I feel quite sure the necessity for doing so would disappear in miraculous fashion. Personal pride would kill them rapidly. Yes, our transmitter must be crystal or "tritet" controlled if peak efficiency is to be gotten. The oscillator circuit generally known as "the tritet" has to my mind one serious disability; 350 volts is about the maximum plate volts that may be used if the crystal is to have a life greater than a few hours. Analysed "the tritet" 59 is really an oscillator and amplifier in the one tube, and as such it carries the disadvantages of the low plate potentials permissible with a three electrode tube used as an xtal oscillator. The type 47 Pentode is without a peer in this role. Experiment here has shown that a 59 tube in a "tritet" hook up most certainly does produce stronger harmonics beyond the first than does a conventional circuited 47, but I have not been able to make it replace the conventional two stages. I found that a "tritet" 59 at 350 volts followed by

a 59 amplifier at 500 volts produced only about 5 per cent. better grid current in the P.A. than the conventional 47 CO at 500 volts, and 210 or 46 doubler at 500 volts, and the "tritet" arrangement required quite a few extra gadgets. If you wish to finish up on ten or five metres with a 7 or 3.5 MC crystal the tritet most decidedly, otherwise think it over. I did, and hence the TX as above.

### Link-Coupling.

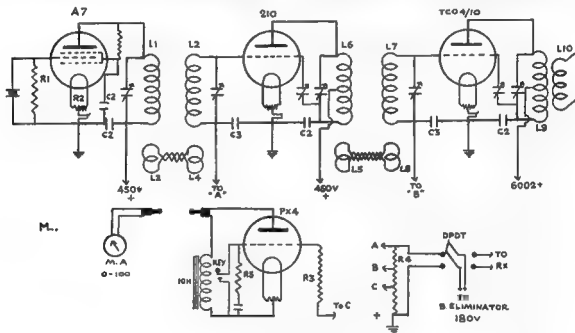
Link-coupling once tried comes to stay. Substitution of link coupling between stages in my transmitter for the old capacitive coupling increased the grid current in the P.A. 30 per cent. Who needs further argument. With link couplings all we need in extra gear is a couple of marguis or other home-made plug in coil forms, a couple of sockets, and a couple of 8 or 10 plate midget variable condensers. Then we may throw those bothersome little chaps, the grid RF chokes into the junk box. Who ever wound a grid RF choke that did choke? I never could. Link coupling confines the stray capacities associated with each tube to its own circuit, and as a result we may increase our L/C ratios in each stage, and thereby obtain greater efficiency, and eventually more RF where it does business. Another great advantage of link coupling is the fact that the excitation can be varied from zero to maximum by swinging the grid tuning condenser through to resonance. Just such a gadget is badly needed by the majority of our fone stations. Driving the grid of the PA or modulated stage in a fone transmitter positive with respect to the filament means grid current, and grid current means distortion. With link coupling as depicted we have a vernier control of excitation in our PA or other stages. Shorting out the grid bias on the PA with the exciter stages switched off and normal plate volts on will give a reading on the PA plate meter which represents zero grid bias. The plate current reading thus obtained should not be exceeded in a fone transmitter if quality or depth is desired. It has been shown that greater excitation naturally must introduce distortion,

but more important to us DX chasers, it decreases the range of our fone.

## Adjustment.

A MA meter is the only component necessary for the adjustment of link coupling to give maximum results. Inductances L1 and L2, L3 and L4, L5 and L6, and L7 and L8 may be wound on the same former, or otherwise tightly coupled to suit individual layouts. The line between each stage may be a piece of twisted lamp flex.

greater physical separation of stages, which same, by the way, is the most efficient shielding available. Having wound coils which will resonate at the desired frequencies for each stage we must proceed to determine what turn ratios are best for our transmitter. The values given have proved satisfactory in my case, though they are not by any means finalised as yet, but could be taken for a starter. Once the tube to be driven is neutralised and its plate circuit tuned to approxi-



## VALUES.

- C1 .001.
- C2 .002.
- C3 .00025.
- R1 50,000 ohms 1 watt.
- R2 20 ohms C T filament restr.
- R3 100,000 ohm 1 watt.
- R4 25,000 ohm wire wound V.D.
- R5 20,000 ohm 1 watt.
- L1 20 turns 20 SWG CC on 3 inch.
- L2 3 turns 20 SWG CC on 3 inch.

- L3 18 turns 20 SWG CC on 3 inch.
- L4 3 turns 20 SWG CC on 3 inch.
- L5 3 turns 20 SWG CC on 3 inch.
- L6 11 turns 12 SWG on 3 inch.
- L7 18 turns 22 SWG CC on 1 inch.
- L8 4 turns 22 SWG CC on 1 inch.
- L9 7MC 9 turns of 8 SWG 3 1/2 inch.
- L10 7MC 18 turns of 8 SWG 3 1/2 in.

I have tried lengths up to five yards at 14MC without any apparent losses. This is a great convenience with the multi-stage and rack type transmitters, as by means of jacks wired up to the link coils and wander cords the output from any one stage may be plugged into any other desired stage at will. For instance, in a four stage TX the output of the CO stage could be plugged direct to the final PA stage to drive the PA on the crystal's fundamental frequency. It also allows of

mate resonance, the coupling between the driver and driven stages can be adjusted for maximum transfer of power from the plate circuit of the driver to the grid circuit of the driven stage. To do this it is necessary to measure the rectified grid current in the driven tube. A milliammeter should be inserted in the grid bias lead (for instance, between A and A in the accompanying diagram). The plate voltage is then removed from the driven tube and we proceed in our en-

deavour to increase the reading of rectified grid current in the grid circuit, as the grid tuning is brought into resonance the grid mills will rise from zero to the maximum obtainable. With a given ratio these adjustments give plenty of scope for experiment. Having satisfied ourselves with results on the first stage, plate voltage may be applied and the stage efficiently tuned. Then we move on to the next stage and repeat the process there. The final results will surprise anyone who has been using the conventional capacitive coupling. A few minutes' contemplation of the circuit should be sufficient to show why this is so.

### Grid Bias.

The grid bias for all tubes in my transmitter, including keyer tube, is taken from a voltage divider on transmitter frame. This is powered by an 180 volt Philips "B" eliminator, which is switched from receiver to bias divider by means of a double pole double throw switch. This arrangement has been highly satisfactory here, but should not be used in a really QRO transmitter for the very good reason that the potentials which build up across the divider by the flow of rectified grid current from the various stages through it may easily rise to a value sufficient to ruin the aforesaid eliminator, and also failing that to overbias preceding stages. But I have found the arrangement in every way satisfactory here with inputs of the order of 50/60 watts, and a little extra bias on the 210 FD stage is all to the good, anyway. If you have a similar eliminator and decide to change over to this method be careful that the positive of the "C" bias circuit of the eliminator is in no way connected to the transmitter (this is quite easily done). Look the circuit over and you will readily see how it can quickly burn up your receiver tubes.

### Keying and Key Click Elimination.

I am one of those unfortunates who live in the midst of the BCL's that are BCL's who expect maximum return for minimum equipment and expense. With result that if I would work during the usual broadcasting hours practical perfection in clickless keying is essential. The system here shown has proved the best of the very many used here, and I feel moved to say if this circuit in your CO stage does not clear up any trouble curable at the transmitter end give up radio and devote your energies to horticulture. Osram PX4 is a highly suitable,

and the cheapest tube obtainable for this job, as its impedance is only roughly 1000 ohms, and it is rated to pass 60MA; for these reasons alone it is superior to the 45 type. If the current of the stage to be keyed is greater than 60MA two or three of these tubes may be paralleled. The grid bias tapping for the PX4 is varied on the voltage divider until plate current in the keyed stage falls to zero with the key open. When the key is closed the grid bias on PX4 is shorted out in series with 100,000 ohm carborundum resistor R3. The current from the divider through this resistor is the only current you break, and is well below one mil. Even this without a spark suppressor arrangement was sufficient to produce clicks in one set long after they had disappeared in an xtal receiver in my own house, but the shunting of one MFD timed by a 20,000 ohm resistor (which values were experimentally determined upon) across the key break finally solved the problem nicely. By means of the plug and jacks in centre tap of each tube any stage may be keyed as desired. Care should be taken that the plate of the keyer tube is taken to the filament resistor, as current only flows from plate to filament in any tube; some people even forget this. The sole MA meter of the station may also be plugged into any stage at will, and also into the grid returns to measure grid current. Jacks are cheap at most junk stores.

### Tuning the Power Amplifier.

The method of tuning the PA tank circuit when tightly coupled to the antenna with the popular zepp feeders' system is the subject of much argument amongst many hams. A method alleged to be the correct one is to open the antenna circuit and tune the PA with full plate voltage and excitation to the lowest plate current reading possible, then the antenna circuit is closed, or feeders attached to coupling coil and the feeders are tuned until maximum allowable or possible plate current is gotten. The rise from 15 or 20MA to 80 to 90 MA is then alleged to represent approximately the power fed to the antenna. There is no doubt that this method is not the best one, and that the PA tank is actually detuned as the antenna is brought into resonance with it, and that with this method the loading of our PA plate is anything but efficient. The foregoing naturally assumed that the coupling between PA tank and antenna coupling inductance is reason-

ably tight. If the coupling was sufficiently loose this method would be O.K., but such coupling would give poor energy transfer to the antenna, and would not be justified in the average ham station. A better method is to use the first-mentioned method up to the point where we obtained the max. plate mills, then the PA tuning condenser should be slowly rotated until the plate mills fall to a minimum value (all other adjustments remaining untouched); as the plate mills fall to minimum obtainable it will be observed that the antenna feeder current will rise. When this point is reached we will have slightly detuned our antenna circuit, and a further slight adjustment there is called for. These slight alterations should be continued and the antenna feeder current kept under constant observation. The tuning adjustment which gives greatest feeder current will be found to be the one which gives the lowest plate mill's and represents the point where the greatest amount of energy is being transferred to the antenna. Metres indicators at centre of antenna and reports from known reliable DX stations who were assisting in and aware of the tests have confirmed this. Do not be deluded into comparisons with other stations by comparing feeder currents gotten by each. Feeder current of itself means very little. A station with an antenna having twice the radiation resistance of your own will probably only be able to show approximately half the feeder current that you can, power inputs and adjustments being similar. But he will probably get twice or more the field-strengths at DX ranges. But an increase in feeder current, all other factors being the same, certainly does mean things, and should be aimed at if maximum efficiency is desired.

## Power Amplifier Tubes.

Perhaps a little talk on desirable tubes for the PA will not be out of place here. I am indebted to several reliable people, including Philips' and P.M.G.'s research department, for some of the information hereunder. But opinions expressed are my own. I use a type 210 as F D because I have it available. Type 46 is in every way its equal, but not its superior. Type 47 has hardly equalled either in FD stage, but is very little inferior. As a crystal oscillator tube, 47 stands alone. It will stand no end of abuse, and appears to be an unkillable tube. The line up of my transmitter should

be an excellent exciter for one of the big tubes. Even 211 or 203A should do fairly well with such an exciter behind it. For the PA my dream tube is a Philips QB2/75, a screen grid amplifier having a maximum plate dissipation on test of 100 watts and a saturation current of 2 amperes. It requires a plate potential of 2000 volts at a current which should never exceed 100 mills. The screen grid voltage, which is 300-500 volts, should preferably come from the same source as the plate voltage. This practice will avoid chances of disagreeable behaviour. This tube is largely used, almost exclusively in the better "B" class stations as sub stage, and is also used by a few fortunate hams, but it works to peak efficiency at 2000 volts at about 100MA, which values cannot be exceeded if long life is to be expected. But at these values you will have grown a beard when you bury it. In the same class is the "Alladin's Lamp" of radio hams, the RCA 852 (I said R C A). This tube, used with really high Q in its plate circuit, is capable of handling 500-600 watts without any of its important ratings being seriously overstepped. But it is an engineer's job to achieve this and at these high inputs it requires tremendous drive. I do think hams using 852 at 3000 volts 100MA or thereabouts have won more international tests from 28MC down than with all the other tubes together. Can we say more? (One of us will own one after Oct. These two tubes at rated inputs may be driven fully by the average efficient QRP rig, a fact which adds tremendously to their outstanding virtues. Below these we come to the 203A 211 class husky tubes, but having low impedances really calling for push-pull operation at DX frequencies and requiring a young power station to drive them to real efficiency. Single ended they are doubtful performers at frequencies higher than 7MC; taking power required to drive and other things into consideration, they are hardly a good proposition as HF amplifiers when better tubes are available. Philips TCO 5/25, a new 40 watt tube rated at about 600 volts 100MA, seems to me to be an ideal tube for the country ham. It can be fully driven with five or six watts from FD or CO, and is especially designed for amateur work. Philips assert it is the best tube anywhere near its ratings they have handled, and is destined to be the most popular ham tube they have marketed

when the hams come to know its virtues. I have never seen a more sturdily-built tube. Its plate gives one the impression that it is a 200 watter. It is obviously very conservatively rated, and is a real RF producer. The new RCA 800 is obviously another real tube. It looks like a grown up TC 04/10 in characteristics, and if it can (and I am assured it does) perform like TC 04/10 with its greater power ratings no one should ever wish for anything bigger or better for inputs round 100-150 watts; 75-80 per cent. energy transfer should be reasonably certain, which is saying things. TC 04/10 needs no praise from me. It is the ideal tube for anyone married to 600 volts or so, and as a frequency doubler feeding an antenna is about as good as the average neutralised PA in its own class. The one I have has been in use for two years with inputs of 50 watts on 7MC, and 60 odd on 14MC in a tremendous amount of work, and shows no sign of approaching demise. I have used quite a few 210's, and I really do think 1C 04/10 is as good as any two 210 type. If you must use E408N, 406, type 46 or 45 in your PA, use them push pull if efficiency is desired. Further, push-pull PA's work infinitely better if a split stator condenser is used in the plate circuit. This applies to all powers.

I see no good reason why a station using PP 45's should not win the Centenary test, for, after all, countries worked will be the predominating factor, and the stations we will have to raise in Europe and elsewhere will, on an average, have little better. You cannot work a station that is inaudible, and if he is R2 there is no good reason why he cannot be raised by the most QRP station handled by a ham who uses his brains. Good luck. Go to it.

## VICTORIAN AMATEURS' TRANSMITTING COMPETITION.

July and August, 1934.

Preliminaries—July 15, 22, 29.

Finals—August 5, 12, 19.

### Rules.

(1) Open only to financial members of the W.I.A. (Vic. div.).

(2) Only apparatus which is the sole property of entrant may be used, except in such cases where said apparatus has been held on loan, and has been in regular use by the competitor for at least three months prior to

closing date of entry, viz., April 24, 1934. (In no case will Institute apparatus be permitted.)

(3) Stations shall be operated only by their regular crew whilst competing.

(4) The frequency to be used by the finalists shall be determined by the competition committee.

(5) The technical judges will control the judging in the preliminaries.

(6) Not more than one (1) studio item will be permitted.

(7) Provided that not more than five judges be appointed (three city and two country) to assist technically with the whole of New Zealand listeners, who shall be the chief judges.

(8) All points awarded by the judges (N.Z. and local) shall be averaged; the station securing the highest number of points shall be declared the winner, and shall hold the Gadsden trophy.

(9) Points shall be awarded as follows:—

	Points maximum.
Quality of modulation . . . .	50
Depth of modulation . . . .	30
Smoothness of carrier . . . .	20
Freedom from frequency modulation . . . . .	10
Selection of programme . . . .	20
Stunt transmission (finalists only) . . . . .	10
Total . . . . .	140

(10) After full perusal of the New Zealand Master Graph the decision of the judges shall be final, and no objections will be entertained.

For the following news from Geelong we have to thank VK3KW (Mr. Bill Keillor), or to give him his ham title, "Scottie." KW is going up from 8 watts to 15 watts very shortly, I understand. Likewise 3GZ to 15 watts. We heard something else about Keith of 'GZ; he has just obtained his "A" licence. Congratulations, O.M. The youngest of the Geelong gang. 3JQ, is a DX fiend, and did well in the "W" Good Will Test. It is rumoured that 3EK's absence can be traced to YL's or Y L—we are not certain of the number.

Some FB fone is heard from 3BW, and 3RP, an old timer, Scottie says, is giving some of the young lads a chance now. Whether he is letting

them get a sig. in or giving some help we don't know.

3SY is too busy with the local BCL station to run anything else. 3AU is having a rest, but is still very keen. The "Black" (or inactive) list contains 3GN, 3QH and 3ZN at the moment. 3KW has gone studio "itemwards" lately, and doing very well. Incidentally 'GZ and 'KW want it known that they are open for rag chewing any Monday morning, on till 3.00 a.m., but just try them later. You'll find them still there. Personally I have never heard them close down.

Now, this news is the type we want from other members of the 'phone section, so shoot them along any old time—over the air, by phone, or by post—to 3DH.

'DH was at Terang on Sunday, April 15, where 'GK and 'BH were tuned in at good strength, and 'BY at "very much" good strength (blotting out all noises, etc.), (reception on a 5 T super). Then at 5.08 p.m., with a car radio (4 tube super) at Colac, 3RI was tuned in at quite respectable strength, and 3CB could just be identified. Later at 11.50 p.m., with the same receiver, somewhere on the road between Apollo Bay and Forrest, 'BY was heard at full strength (max. undistorted output of the power tube).

## ANNOUNCEMENT EXTRAORDINARY!

Centenary Contest Awards.

By VK3ML, Contest Manager.

If any contest or test has stirred the minds of the hams during the past ten years, it is the Melbourne Centenary International DX Contest to be held in October this year. It is the main topic of hams in VK to-day. We have received letters galore since its first announcement two months ago—enough to tell us that the contest is going to be the world's biggest and best.

Of course, many letters contained some criticism for and against the present awards, mainly pointing out that there is no handicap for power inputs. Well, we have gone into this matter, and can now announce the big surprise.

There are to be TWO first prizes, one for the winner of the open event—that is, with unlimited power—and

one for the handicap event, which is to be awarded on the POINTS PER WATT basis (obtained by dividing the points won by the power input in watts). Now that has made the contest still fairer, and enables every station to be on an equal footing, from flea-power up. Of course, no station can win both first prizes, and in the event of the two sections being won by the same man the open prize will go to him and the handicap award to the second placed entrant in the latter event. Therefore our prizes are now: Two firsts, one second, and one third.

Now, hark ye, mighty hams, to the latest awards, which are as follow:—

Open Event.—First, one 852; second, a Siemens meter or set of meters of any type chosen by the recipient to the value of £10; third, one 800.

Handicap Event.—First prize, TC 05/25, QC 05/15, TC 03/5, MC 1/50, E424.

Through the generosity of Messrs. A.W.A. Ltd., Philips Lamps Ltd., and Siemens Ltd., we are able to offer the above much-to-be-sought-after prizes. We are very greatly indebted to these firms for their generosity in coming forward with these valuable prizes. Just put this magazine down and think what this all means. You do not have to be told that this contest is to be a success before it is run. These firms have made it so, and the hams will never forget it, I am sure.

## CORRESPONDENCE.

To the Editor.

Sir,—I feel I must express my feelings at the unwarranted outburst from South Australia in April issue with reference to notes edited by "QRZ," and feel sure that anyone who takes exception to his outspoken attempt to rectify their faults is either pigheaded or well aware of the atrocious note or procedure with which he fouls the air, and is too narrow to admit the truth.

As one who has been a "victim" of "QRZ," let me thank him now for the tips he has given, which have been a darned sight more useful than the so-called repts. one gets when QSO in the majority of cases.

In conclusion, long live "QRZ" and those of his ilk who are unafraid to speak their thoughts.—Yours, etc.,

LAUNSE A. DEANE, VK6LD.



# AUSTRALASIAN ENGINEERING EQUIPMENT CO. PTY. LTD.

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Paper Dielectric—Wax Filled

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T.C.C. High-Voltage Transmitting Condensers have been used practically exclusively by the "A" and "B" Class Broadcasting Stations throughout Australia, and also by all the leading Amateurs.



Type No.	Capacity.	Height.	Width.	Thickness.	Working Voltage D.C.	Price.
121	.00025	1½	1½	1	1500	17/11
121	.002	1½	1½	1	1500	12/1
101	1 mf.	5	2½	1	800	18/6
101	2 mf.	5	3	1½	800	24/6
121	1 mf.	6	3	1½	1500	24/6
121	2 mf.	6	6	1½	1500	37/-
141	1 mf.	6	6	2½	2500	76/6
141	2 mf.	6	6	4½	2500	138/-

High Tension Condensers for smoothing purposes, with working voltages up to 25,000 volts D.C., may also be obtained. Prices on application.

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List Price £5/5/- Complete

The Harlie Mike has approximately .25 volt output. It is self-contained, having matching Transformer and Bias Battery incorporated in base. Complete with On—Off Switch.

Height adjustable from 13 in. to 18½ in.



## PHILIPS NEW TRANSMITTING VALVE. Type TC 05/25.

Philips Lamps (Australasia) Ltd., 590 Bourke street, Melbourne, announce the release of the above new tube, which will be added to their extensive range of transmitting valves. The characteristics of this valve are as follows:—

- Filament voltage, 4.0 V.
- Filament current, appr. 2.2 A.
- Total emission, appr. 800 mA.
- Anode voltage, 300-600 V.
- Max. anode dissipation, 40 W.
- Anode dissipation during test, 60 W.
- Amplification factor, appr. 9.5.
- Mutual conductance (at  $I_a = 50$  mA), appr. 2 mA/V.
- Max. mutual conductance, appr. 4 mA/V.
- Internal resistance (at  $I_a = 50$  mA), appr. 4750 ohms.
- Largest diameter of bulb, 70 mm.
- Total length, 170 mm.

The filament of this valve is oxide-coated, and is therefore highly efficient, and owing to its strong mechanical construction the valve is exceedingly well suited for mobile transmitters.

The TC 05/25 has been constructed for use as an oscillator or as an H.F. amplifier in a telephony or telegraphy transmitter on wave lengths down to 15 metres. It can also be used as a modulator or frequency multiplier.

The grid excitation for one TC 05/25 can be obtained from a Philips TC 03/5. One TC 05/25 can be modulated with two TC 05/25 or "Mini-watt" valves F410, connected in parallel, using anode voltage modulation (Heising system).

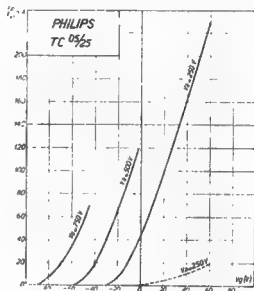
**Filament Voltage.**—It is advisable to supply A.C. to the filament. When using a 4-volt accumulator it is as well to interchange the filament connections once a week in order to ensure uniform wear of the filament.

**Anode Voltage.**—For this purpose the use of one Philips full-wave rectifying valve 1561 (2 x 500 volts, 120 milliamperes), one or two Philips valves 1831 (2 x 700 volts, 60 milliamperes), or 1832 (700 volts, 120 milliamperes) is specially recommended. It is also well, if possible, to use two half-wave mercury vapour valves, DGG 1/125. For values of the anode voltages see under "Operation."

**Negative Grid Bias.**—When the TC 05/25 is used either as an oscillator or as an H.F. amplifier, the gridleak

resistance should be approximately 4000—0. At a low anode voltage a smaller gridleak may be used. A higher gridleak will result in a higher efficiency with a lower input. It is recommended to apply sufficient negative grid bias via the leak and high-frequency choke coil, so that the anode dissipation does not exceed 40 watts with the valve not oscillating.

**Use as an Oscillator or H.F. Amplifier.**—On wave lengths of 150 metres and higher the anode voltage may attain 600 volts, whereas the



maximum anode voltage for wave lengths of approximately 15 metres may not exceed 500 volts. In both cases the anode current may amount to 100 milliamperes. In the case of a loosely connected aerial circuit, a high anode current may not be forced up by too heavy grid excitation. In that case the grid current would be much too heavy. A gridleak resistance which is too low can have the same effect.

If the adjustments have been carried out correctly the grid current will amount to approximately 15-20 per cent. of the anode current.

**Use in a Frequency Doubler.**—On account of its great permissible anode dissipation the TC 05/25 offers special advantages when used in stages with low output, e.g., a frequency doubler. Its high mutual conductance and the low internal resistance render the tube highly suitable for this function. In this case it is recommendable to apply the normal anode voltage and a negative grid bias of about 150-200 volts. The latter depends on the ex-

citation and on the impedance in the anode circuit.

**Use as a Modulator.**—When used as a modulating valve the negative grid-bias should be such that the maximum anode dissipation of 40 watts is not exceeded. If several valves TC 05/25 are to be connected in parallel, each valve must have a separately adjustable negative grid bias, so that the load can be uniformly distributed over all the valves. It is then necessary to insert a milliammeter in the anode circuit of each of the valves. Interrupt on of the grid bias may only take place when the anode voltage is switched off.

## THE SECOND FISK TROPHY CONTEST.

Contest to be known as the Australian 1934 Low-Power Contest, and to constitute the second leg of the Fisk Trophy competition to decide which State will be the next holders of the Fisk Trophy.

A station decides to use a certain power (within one to 10 watts), and goes on the air during the period of the contest with the view of making up to 30 contacts, with as far distant stations as possible. The lower the power and the greater the distance of the station contacted, the higher will be the miles per watt.

Each State Council is requested to provide a prize for the leading entrant of their particular State, to stimulate interest and increase the chances of the State concerned.

Rule 17 definitely gives a State with weak numerical strength an equal chance with those with a large number of hams, for every State can find five active hams to act as its team.

Non-members of the W.I.A. are invited to compete and forward their entries.

The rules are as follow:—

- (1) The Federal Executive's decision on all matters will be final.
- (2) The A.R.A. are the representatives of the W.I.A. in New South Wales.
- (3) The power will be measured at the anode of the valve feed-the aerial, and must be between one and ten watts. The anode voltage and current must be stated. The same power must be used on every band for each contact. Entrants are especially asked to note this.
- (4) The Federal Headquarters re-

serves the right to appoint a representative in each State to inspect and check the power of any participant during the contest.

- (5) The contest will start at midnight Eastern standard time on June 22nd and finish at midnight on June 30th, 1934.
- (6) All logs must reach the Federal Secretary, W.I.A., c/o Box 284D, G.P.O., Adelaide, by July 10th, 1934. Late entries will be excluded.
- (7) The following particulars must be shown in the log report:—Date, Time (Eastern Standard), Report Received, Report Given, Band, Station Worked, Nearest Large Town, and Estimated Distance.
- (8) Once a station has been QSO-ed, he cannot be QSO-ed again on the same band during the contest, but may be contacted on any other band.
- (9) Any of the amateur frequency bands may be used.
- (10) As many contacts as possible can be made during the contest, but only 30 are to be counted. Entrants are asked to submit their 30 best contacts, or any number up to that figure.
- (11) Each participant must find out from the station QSO-ed the name of his nearest principal city, if not already known by him and entered in the log.
- (12) The distance between the entrant and the station marked will be measured by Federal Executive. These distances will be totalled and divided by the power used, thus finding the M.P.W., which will be the score.
- (13) No distance under 100 miles will constitute a contact.
- (14) And entrant detected breaking any P.M.G. regulation will be disqualified.
- (15) No member of the Federal Executive can enter as a scoring member of a State team.
- (16) Only one operator will be permitted to operate at any one station, and his name must be stated on the log report.
- (17) To decide the winning State an average will be taken of the scores of the five leading stations of each State, and the State team having the highest average will be the winners.

# VK3 SECTION NOTES

## Key Section

(Conducted by L. T. Powers, VK3PS.)

In the absence of our chairman, on very important business, 3WG took charge of the last meeting of the section, and kept the gang well in order with an interesting chat on Institute consciousness, which should be remembered and followed. It would be well worth printing, but no one could write shorthand, and many good points would be lost in an attempt to reconstruct that lecture given in Bill's inimitable way.

A suggestion has come forward that visits should be made by the section to various places of interest, such as the police radio station, and if the gang would appreciate this they can say the word at the next meeting, and we will see that arrangements are made.

Although his QSL card may boast that the station is 100 per cent. D.C. operated 3KR would do better on A.C., as he wouldn't have to clean battery terminals (although he only does it once a year now—hi!). It takes about five minutes to find a spot for the battery clip to get any juice through for the rx! 3KR was QSO with 2DQ one morning during Easter, and the latter signed off "GN." We wondered what DQ had been doing during the holidays.

Did anyone notice in QST about the ZL who went off the deep end about a W answering a badly directed CQ? Well, 3PS, working from 3KR at Easter, answered a CQ Dx from a ZL3 at 1400 one day on 40 mx and got told off properly.

3CS is a new call that is owned by ex 7CD, and if anyone wants an fb local rag chew they can be sure of it by calling 3CS. 3JO is another transfer from the Apple Island. Originally a VK3, he has been operating as VK7JO for some time past.

Before going on a trip round Australia 3OR left explicit instructions on how to charge the B battery for the B.C. rx from a 32 volt light plant, but forgot to connect up the switching gear. He runs an audio amplifier with a pair of E408Ns in P.P. feeding three speakers on a 4-foot square

baffle. The range is said to be 14 to 14,000 cycles. This must be to entertain the swans on Lake Meran!

The Canterbury gang seems to be concentrating on S.S. Supers. 3RX started the craze; 3BQ has gone one better with a xtal gate in his, and says its vy fb. These things are necessary in bad QRM areas, and the Malvern-Glen Iris group might well follow the example. 3DM has made a start, and wants a few rag chews about Supers and also Doublet Antenna systems.

3BJ says link coupling between stages is fb and 3PS will second this. If you want a hefty drive, try this out. What's this secret rx of 3YO? He says it should drag in more sigs than Cedric's S.S.S. Perhaps that's nothing to wonder at!

3EP is praying that the S.E.C. will take over the supply at Rochester. He will be on C.C. very soon, and can't get enough kick out of 200 V.D.C. to produce the desired effect (i.e., QRO).

3RG at Castlemaine is putting out some fb fone on 200mx and working some DX on 40mx, but very seldom has a yarn with the gang in VIM on account of skip. He seems to have entirely forsaken 80mx.

Rebuilding seems to be the order of the day, and circuits published in "Amateur Radio" seem well to the fore.

3KO is finding both rx and xmtrr built after "Amateur Radio" style very fb. New xmtrrs are being built at DP, WY, CS and KE, and receivers at LQ, DM, YO, CS and PS.

That's all for the present, and don't forget to let 3PS know anything that's doing, so as to let it get into your notes.

## PHONE SECTIONAL NOTES.

The last meeting of the above section was held at Kelvin Hall on Tuesday, March 27.

Mr. Thompson spoke on the matter of allocations being treated as a permit to operate on the phone band. The position amounts to, in short, that unless a station has an allocation on some frequency between 1720Kc. and 1114Kc. it may not be operated either on week nights, Saturdays or Sun-

days, on any frequency below 1720Kc.

In connection with the now well-known (we hope) competition, to be held during July and August, namely, July 15, 22 and 29, with finals on August 5, 12 and 19, it was moved by 'T.H. and seconded by 'L.U. that the closing date for entries be extended to April 24, which will give those who did not send in their entries at the last meeting time to bring or send them along to the April meeting.

Before coming to the competition rules there was one other motion carried—that the value of crystals, supplied by members who came into the pool when it was formed, be fixed at 25/. This means that any station coming up above 200 metres for the first time will have to purchase a crystal from the Institute, the fixed value of which is 25/, or, in the event of another station becoming inactive, and this station takes from the pool the crystal originally supplied, the incoming station may supply a crystal for the frequency where the blank occurs. The above motion was carried unanimously, moved by 'T.H. and seconded by 'B.H.

## COUNTRY NOTES

By 3WE.

Doings in the north during past month have been varied. 3LH did not move to Sea Lake, after all, business having looked up a bit, thanks, probably, to the forthcoming Test matches. Herb. is still in Birchip, though has done little on the air bar entertain the BCL's on 200 metres. 3CH has been grinding xtals—extra special ones, too. Had one in t'other pm which 3WE reported too low in frequency for 3500 k.c. band, so Alf ground it down hard and tried again. Bill reported it still about 90, and advised a few more brisk rubs. Alf obeyed orders, and came back on the same spot. Said he'd busted the pebble, but had a bit which was still oscillating all right. 3WE suggested taking the xtal out to see what happened. It still worked—hi! 3WE had a similar experience when tuning his 80 metre rig up to 229 recently. He found that the CT grid choke (PP stage) made a good TNT coil on about 240 metres, hence the new one is nearer 1000.

With the cooler weather 3500 band is becoming "fuller and fuller" each night. Besides our northern gang,

quite a number of others seem to be discovering its possibilities as a VK-ZL fone band. There is going to be some Qrm this winter. 3500 k.c. is rapidly "coming good," and by the end of the present month should be ideal, except for occasional patches of Qrn, and the nightly fade-out. The latter phenomenon (at present at midnight) should go further on, and set in during the small hours. 3PY and self (3WE) have kept tabs on it, and find that it varies with the season to the extent of about an hour per month from December last, with occasional throwbacks for a spell of hot WX.

A list of stations heard on 80 on fone alone would nearly fill the whole mag., and includes W, K, ZL and all VK except VK6, although plenty of the latter heard pounding brass. Some of the best fone comes from 3PY, 2NE, 5WJ, 3ZL; but some of the others are pretty deadly. There is also a tendency to use the band for grinding out records by the hour—anyone who wants to do that should apply for an allocation on 200.

The Northern gang—3CE, 3KR, 3PY, 3JV, 3CD, 3AN, 3CG, 3ZL, 3CH, 3WE and others—still work their hook-ups, up to 6 way Qso's being common, while the Sunday morning ragchew a la 3HL, 3KR, 3NN, etc., still goes on. 3500 is becoming popular in VK5. 5WJ leads the bunch in quality, but the daddy of them all is 5QR, with his 1½ watts of B batts. and puts phone into ZL. Even 5LD made his debut on 80 phone the other nite. Loop mod. 5LR and 5IV still very active, but it is reported that 5XR has Qrt. Did someone say a YL? (Read the "pome" in last issue agn, OM.) 3ZK, the no meter expert, only hrd once of twice; must be getting cold on the concrete floor, or, maybe, the 15 2nd ops have got out of hand. 3PY had a ribbon mike. Ses was fb. but couldn't breathe within 30 ft. of the xmitter. Since made a new condenser mike. 3ZL, Telefunken king, still takes the YL home early, so he can get on with the 80 gang.

Doings during Easter were enlivened by a trip per 3CH's "Stude" by 3CH and 3WE, complete with YF's. Said hams made most of the opportunity to personally Qso as many of the boys as possible. 3KE was WE's first port of call. Qrm from trans at Ke's is nearly as bad as from the Birchip power house. Going out to call on 3KT, Bill got properly caught.

KT had his sticks down, and 3WE bowled into a nearby house, thinking he'd struck the right joint—and found no one home. Anyone listening to 3BY on Easter Sunday nite, with 3BY, 3TH, 3DH, 3CH and 3WE present, knows that the fun was willing.

## WESTERN DISTRICT NOTES.

### By 3HG-30W.

The main item of interest seems to be the trip of 3JA, 30W and 3HG to Camperdown and Terang on the 22nd to see the boys there. The weather was very unpleasant for travelling, but a most enjoyable day was spent in the shack of 3GQ, yarning before the fire. The Colac gang and 3NQ were invited across, but were unable to make the trip on account of the inclement weather. During the afternoon 3GQ showed us just how easy DX is, and we all have new ideas for 20 metres. After tea we all went along to Terang to call on 3NZ, but found Norm. out when we arrived. However, we decided to await his return, and spent the time swapping yarns (?) in his six by eight shack (standing room only!). Time crept on, with no sign of the missing ham, although he was expected at 9.30 p.m., so at about 11.30 it was decided to leave for home, and just as the car started up rolled 3NZ himself, as large as life. It is still a mystery where he was all the evening, as he would admit nothing; but the boys had their own ideas!

3JA is another who has staged a comeback on the air, and it is hoped he will be on a lot now, as YL grm seems less troublesome! 3XI is building up a new rig, and hopes to be on soon. Heard his speech amplifier, and believe me, that boy knows how to get high quality reproduction. 3RH heard working on 40 and 80 with the same old fb sig. Nearly blocked receiver here. 3HO still off after her recent illness; and where, oh! where, is 3HM these days? 3BW is away on a trip to Fiji, accompanied by 3NM.

Conditions on 40 are falling off rapidly now, but 20 is brightening up and 80 is very active now that old man Qrn has lifted.

Gru now, so cheerio till next month.

## NOTES FROM NORTH-EASTERN VK3EG.

Well, the gang certainly seem to be busy, judging by the fellows using

S.S.S. receivers and what not, and the Q.R.M. is just as bad as ever. Still, it shows the band is well inhabited, so why growl.

With better condx, 80 metres is becoming popular now. The Quirindi gang have been quiet. You boys sure disgust me; where are your notes, fone 2?

John, of 2XQ, been away, and will be qrt until end of this month, on QRP then. Ur xtl sigs R Max hr, O.M. 2NK hr R7 fone fb, but QSO? N.D.

VK2BP fone nice, VK2QA R Max fone also 2HV. 3CE hrd often, and ole 2RJ gets the call nw and then, and QRM's me. Hi!

DX up here been FB lately. Yanx can be QSO'd from 3.30 p.m. on EA sigs a-plenty 'mongst the QRM, and the 40 mx gang sure rub in some solid sigs hr. 3NG nice fone R9 Telz-funken. 3HG nice just pdc solid, 3WL hrd nw and then clg DX, the Yanx seem to fall hard for 3MR, hrd seven yelling last nite. I seem to be QRA hr in great place for reception of any locals on the air, Hi! 2HF R. Max. SE pdc. VK2ZH nice sig, O.M., has been rebuilding. Was in VIS at Easter, and saw his rig at the Show. FB and that, S.S.S. too. Also saw 2LV, 2HU, 2NO, and had nice rag chew when I was down there.

VK2HB, VK2ML and 2QS, the "army," hi! All put a mean sig in here. Ole 5MU has bin robbed, and now 5SU puts out xtal sig that makes the Yanx fall over themselves. 2OF is qrp again. 2WU was on 40 for first time for months; haunts 3.5 mc these days, R8/9 here.

Sunday mornings are great for rag chews on 7 mc, and dozens of XKS on fone. The VK5 very solid here. Ole 20j QRT mostly wid PWR tranny trouble, 2DO R7 wid his 45's. VK6RA R7 pdc hr late at nights, and VK6FL still misses a lot of sleep. K6EWQ on 7010 comes in R9 here. VK3EG is glad to be back again after couple months' change in QRA. Using 45 C.O. 46 buffer and 210 final wid 1000 v. on the 210 at 130 mills; 700 on the 46, and putting 2 amps. up the 33 ft. feeders. Antenna very directional for VIS, and VIH, but been landing the DX nicely.

Guess the boys will soon be dusting up the gear for the VK contest; it sure will be all in.

## NORTH SUBURBAN RADIO CLUB.

VK3FY.

W. Wonder.

Since writing the notes for the last issue of our "Mag" 3FY's club rooms have been the scene of many activities. On a recent Saturday afternoon a 35 ft. mast was hauled (amid a sixty-mile per hour gale) to the roof of our club rooms.

After much heaving and hoing Dick Dowling, plus an assistant weight lifter, managed to pull the mast into position, while about twenty members held guy wires from various angles, thus preventing the mast from leaping on to the roofs of our neighbouring BCL's.

The work concluded at 6.30 p.m., when light refreshments were served. It is to be hoped that this new aerial system increases the range of both the short wave and broadcast transmitters.

It is with regret that we announce the resignation of our President, Mr. W. Murden, 3TY, whose time is temporarily taken up with study. The presidency is now in the capable hands of Mr. D. Dowling.

A morse class has commenced, and will continue at 3FY's rooms every Monday evening other than general meeting nights. Full particulars will be supplied by either the secretary, Mr. F. Maher, 3FZ, or the publicity officer, Mr. W. Wonder.

3FY's new 200 metre transmitter is in the course of construction by a number of our capable engineers, and it will be on the air during April, replacing the present outfit.

Full particulars concerning the club's activities, etc., will be supplied by the secretary, 102 McKean street, North Fitzroy, or at the club rooms, 354 Rathdown street, North Carlton.

## THE ASSOCIATION OF RADIO AMATEURS (N.S.W.)

### ZONE 6.

With the approach of winter all the country chaps seem to be brushing the cobwebs off their gear and tuning up on 80.

2WH has his rotary converter pegging fb now, and uses a pair of 46's

in the PA, modulated by a 250, and at this location puts in a R. Max signal. 2LM had the misfortune to burn out his 3000 volt genny, but, not to be beaten, put a slipring on the motor, then rewound a few transformers, and is going fb now with an A.C. supply. 2RS is back after an extended holiday in VK3; brought some new tubes with him, and now has the fone working very fb.

2UJ uses a vibrator and tranny for power supply, and has trouble with the points. Judging by the fb fone and music from 2QZ, he must be located near 240 A.C. mains. 2RJ was heard once. He had his 2000 volt genny rewound, also rebuilt the outfit and installed a new modulator. 2QA is now using grid bias modulation adjusted according to VK5MU in March "Amateur Radio," followed by two stages of class B linear, and the results are superior to any other method tried here. There is also a new receiver in use here, two stages of TRF using 78's electron coupled 77 det resistance, coupled to a 37, which is choke coupled to a 43, feeding a dynamic speaker.

As the winter approaches the VK3 chaps come in very consistently, but most of them don't come on till midnight. I think they must go to bed early, then get up and come on the air.

2XQ is heard occasionally with a T9 signal, but 2HC, of B.E.R.U. fame, seems to be absent. VK2JG has acquired one of the new piezo astatic crystal mikes. The quality is fb plus.

### ZONE 7.

On 40 mx conditions have been only fair in this part of the State. DX appears to fade out earlier now with the winter coming on, although some excellent early morning DX has been heard.

The 80 mx band is back in its stride again, and we find a great number of the local chaps using this band.

In Wagga we have another call, VK2JA, and Athol Mitchell, the op, would appreciate it if the pirate who has been using that call for some time would discontinue. Athol puts out an fb sig. from a pair of 46's in PP, and is looking out for Qso's. 2TH has rebuilt his MOPA to breadboard layout, and the first CQ raised W6QD, but when he reported Roy as R9—well, the glassy look has not left Toc H's eye yet.

2WO has changed Qra again, and is now located at the Wagga Fire Station. The station has been off the air for some time, but the gang are rebuilding, and will be on with a Tri-tet osc and PA shortly. 2PN been working DX on 40, but says he is going to park the rig on 80 mx and leave it there for the winter. Heard a Yank calling 2TA on 40 mx, so guess Allan is still after the old DX, but he talks of changing up to 80 mx again soon. Bert, of 2TZ, is still coming on the air again—when? 2FI has his dynamite factory going again with a car engine on the generator. Gets fb reports on 80 mx, but on 40 the antenna appears to be very directional, and reports vary accordingly. 2WH has a very fb power supply consisting of a small rotary converter working from the 32 volt supply. The transmitter is three-stage xtal, and is entirely worked from A.C.

Well, I think that's Qru for this month, but I would like to point out to the gang in this zone that 2FI is on 80 mx every Saturday evening looking for dope.

## ZO 2QR.

Well, chaps, here are just a few strays gathered on 14 and 7 mc during the past few weeks.

Jack Scott will no longer make whoopee with the DX, for the Orsova is bearing him rapidly towards the land of G. Scottie had a way of his own with the DX, and it becomes very ordinary to call long and lovingly to some DX station, return excitedly to the receiver, and be rewarded by hearing 2NR called.

2JX, when informed on the morning of April 1st that his xtal had two peaks and was joyfully jumping from one to the other, would not believe 2QR; but had to be rung up, and even then I think Peter thought I was pulling his leg. 2XU is a 20 mx expert, and 20 had to be very, very dead before Gil's T9 sigs are heard on 40. 2OR burnt his hand badly at work. 2DR going CC on 40, and was found trying his hardest to beat down an Arcade junkshop salesman. Pretty hopeless, eh, Don? As a result of being the youngest student in N.S.W. to pass the Leaving Certificate, 2QZ is now at University, and often sits and gazes longingly at the cupboard where his OM has locked up his outfit. 2ZO puts out fine fone on 40 mx,

and he will soon have another blind operator on the air, as my ole pal, George Best, sat for the last exam. Look out for them both, chaps, because the least we can do is to try and make their Qso's as bright as we can. A loud voice was heard on 7 mc calling "Hullo, Cadcock!" 'Twas 2ND, and he informed the plane that their sigs were very weak. Say, 2ND, if you can't hear 'em on the "Comet Pro" they must be weak. 2ER is chasing DX on 14 mc. Don't know what he is using, but bonza pdc sig here. 2DU puts out excellent 7 mc fone, and 2ZN tells me that Dud's RX is fb.

Well, chaps, would you be good enough to give me all your latest doings per 7 m.c., or let me know by post?

## ZONE 8.

VK2NF has gone to VIS to sit for exam., and hopes to be back on the air with renewed vigour when it is over. Good luck, Reg. 2QD having trouble with his Hertz, after putting up a new 50-foot mast. The house-tops seem to be absorbing all the radiation. 3EG is using matched impedance Hertz, and has plenty of punch here now on 40 metres. How does the 210 like it, Ivan?

80 metres is improving, and appears very popular. Most VK fones are R8.

## NORTH SHORE ZONE.

The most outstanding event during the month was the farewell hamfest to 2NR, which was held at the shack of 2JX. Although the wx wasn't of the best, there was a good roll-up of hams from around the district, including the following:—HZ, HY, HG, HL, VL, LZ, ND, VS, UX, DY, OR, ER, QR, OR (2nd op), DR, and, of course, Scotty, of 2NR. Frank, of 2ER, officiated as toastmaster, and did his job so efficiently that (well, anyway, Frank says that the trouble was caused by a bit of cheese he had eaten, hi). Many were the tall yarns in circulation over the hotdogs. 2HG excelled himself and astounded us by an anecdote re a couple of 201a's which, he said, had a load of 700 watts! This was too much. Frank proposed a toast to those 201a's, and we stood for a minute in silence in memory of them, hi. Well, I think Peter, of 2JX, is writing up the hamfest, so I won't steal his thunder with any more here.

Another event of merit was the activities of Mac (2ZH), with his station



at the Royal Show. He certainly did some splendid work in spite of the terrific Qrm, etc., from nearby motors.

HY, DY, LZ, HL, VS, HZ, and DR were entertained by 2ND somewhere around the mystic hour a few weeks ago, when the boys had an eyeful of TND's Comet Pro. The receiver is certainly fb plus in performance and appearance. Norm says that he honestly can't give any Yank a report of less than R6 now, and he's certainly proving it by working them hand over fist each night.

Eric, of 2EL, has now installed a 40 mx xtal, and is driving a pair of tens in the PA. 2EL has erected a new full wave 40 mx Zepp, and has noticed a marked improvement in his reports.

2AG is getting out with his T9 sigs and brings in lots of Yanks. 2AH is very busy tuning up his S.S. Superhet., and, believe me, it's fb plus.

I had a visit from 2EZ recently, 2EZ has been up-country with QRP, where he worked a W6 with 3 watts. 2EZ is going down to Jervis Bay and 250 volt D.C. mains shortly. 2VG's call sign is prominent on the wall of Manly surf sheds. Evidently Rex has been Qso surf recently. 2BA is back in Sydney ag'n for good, and has a type 800 perking in his PA. 2DU has been Qrl this month, and hasn't been on much. 2DY is building a new multi-stage xtal rig. 2GJ has gone xtal at last, and is doing his best to trawl some DX in the mornings. 2HG says that this getting-up-in-early-mornings-for-DX business is not so hot. Jack is now keen on the rae chewing at respectable hours. 2HG has worked a couple of Europeans during the month, one of which, PAOSP, would like contacts with VK's. 2AE is a brand new ham who hails from Wahroonga: his Qra is 1658, Lane Cove road, Wahroonga, and the name David Adams. Dave has a temporary rig on the air, a TNT with about 600 volts on a 45.

2AE is the youngest ham on the air in VK2, and perhaps in all VK, as he has been given a special licence by the RI because he is only 13 years old!! Have heard many Yanks calling 2HF, so evidently the Qro is perking over Manly way. 2ND has installed a condenser mike, and, believe me, the phone is now absolutely faultless. Norm brought down the height of his

ant. at one end, and immediately worked an F8. 2JU visited 2AH the other day, and had a big rag chew with Alan. 2JU had a fifty watter in tow which he wanted tested. Paul, of 2KA, has been heard on fone at the week-ends. Evidently the auditing of the A.R.A. books is keeping Paul busy, as he doesn't seem to be on as much now.

2OE hasn't been on the air much, but has been busy eavesdropping at his receiver. 2JY has built the Tritet 5 band exciter unit, and has been very busy winding power transformers during the month. 2PV still Qrl Uni., and has given up the idea of getting on the air for the time being. 2VG is still working many W's. 2YC appears to hold a minor hamfest every day in his pharmacy. 2NE has a very nice rig, but has to keep it quiet during broadcast hours. 2DR has at last installed xtal on both bands, instead of xtal on 80 and S.E. on 40. Also has acquired a brand new second op. (No, not a junior op, hi.)

Well, at last 20 mx is looking up again. The W's are coming in well in the afternoons, a K6 was heard coming in on fone at R8!! Also, 40 mx is still holding its kick. The Europeans are being worked in the late afternoons, and plenty of W's at night. Altogether, it has been a pretty successful month as far as conditions are concerned. Well, that's about the lot for this month; the Epping district notes will probably appear under a separate heading from now on, under the able pen of 2QR.

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### MANLY DISTRICT RADIO CLUB. Broadcasting Surf Carnivals.

By Doug. Hardy.

Yes, friends, countrymen and hams, it was our privilege to receive an offer allowing us to broadcast the events of a surf carnival on Saturday last. This time it was the North Steyne Carnival, which is noted for choosing heavy weather year after year. Saturday was no exception to the rule, for be it known that a bumper surf was curling on to our golden sands.

Volunteers were called for a 2nd op. on the lugger. Alas, at times like this 2nd ops. simply fade away, however. We certainly should have shanghied one of our members, but

this was not necessary, for he arrived in time to sail on the clipper.

The art of bargain hunting was the next part of the procedure to be indulged in (very necessary business this), so we paid a visit to the company of Widdis Diamonds; 250 of these sparkling little fellows were set before us in two big parcels to do with as we would.

As we set off everything runs sweetly UNTIL we reach the heads. Here we meet green seas rolling in, our gear has to be shifted on to the floor, and from now on we chase batteries, receivers and mitter, first aft, then for'ard.

At last we arrive off the beach. How we arrived or why does not interest us very much, for 2nd op. is busy over the rail, and methinks 2WQ is feeling much the same way.

However, the receiver is perking okay and we pick up a message from 2MR, our offiders on the beach. They say they have not heard us yet. "You're telling us," we say, "maybe you would like our job of pitch and toss out here."

The first event is about to start. Everything is ready, switch on, yes, both toobs are alight—pop, pop—what was that? The filaments that were, are not! How come, say you! Oh, the "B" batteries just slid across the floor and played a little joke on the low tension leads, with the expected result.

We try to bribe a surf boat crew who are mucking about alongside us to go ashore for more toobs, but, no, sir, "If we go ashore we stay ashore," said they.

So, we of the boat crew did nothing, if counting seagulls and dead marines can be so called?

The shore station was all set for operating by 2 p.m., so a shout was given to XVK2MR without success.

In the end, getting sick of it, we thought we had better ask them a few questions, they, in turn, answering us by waving a handkerchief. It was in this manner that we learned of their inability to QSO with us. We waited about for two or more hours in the event of them coming on the air again, but on seeing the lugger weigh anchor we decided to call CQ once, we clicked and then hiked round with our gear to the cove, where we met the "ark" alongside the jetty, and two "not so happy" operators.

Well, gang, so ends one of the days in the lives of members of the "live radio club" who are ever on the look-

out for something to do. Anyway, we are quite sure the "yachting party" had plenty to do.

By the way, hams, have just heard 2WQ with some very fb fone, and as he has only had his call a coupler weeks he is very anxious to QSO, so give him a shout sometime. His QRA is R. Wilkins, 87 Darcey road, Manly.

## VK4 (QUEENSLAND DIVISION)

The seventh annual meeting of the Wireless Institute of Australia (Queensland division) was held at headquarters, Heindorff House, Queen street, Brisbane, on Friday, April 13, before a very large attendance of transmitting and student members, also two visitors VK4RQ and VK4KZ.

**Trophies.**—VK4GK, of Wynnum, was presented with the gold trophy for the best station for 1934, and VK4RY with the red pennant for second place.

**28 M.C. Trophy.**—This was presented to 4XN, of Dalby, second place being awarded to 4GK for work on ten metres.

Pennants were awarded to the three VK4 stations gaining the leading scores in the recent Fisk 5-point relay contest. 4RV, 4AW, 4DR, in order of their scoring.

**Election of Officers for 1934-35.**—President, A. Waby (4AW); secretary, Mr. Houston; assistant secretary, Mr. Harmer; treasurer, R. Browne (4RB); Qsl. officer, C. Miller (4US); traffic manager, A. Waby (4AW); publicity officer, W. Harston (4RY); legal adviser, H. Walsh (4HW).

**Council.**—V. Kenna (4FK), W. Harston (4RY), W. Chitham (4UU), W. Wishart (4WT), R. Browne (4RB), Mr. Harmer.

**Life Member.**—In recognition of past services in connection with the management and activities of this division the appointment of hon. life member was conferred on Mr. A. Waby (4AW).

Kindly note that all correspondence for the Wireless Institute (Queensland division) should be addressed to the secretary, Box 1254 V., G.P.O., Brisbane.

Conditions on the various bands in VIB have been rather poor over the

last few weeks, with the exception of W stations on 40 mx; nothing much has been heard in the way of dx.

4JF now back at his own Qra, and has been experimenting with grid modulation.

4US reports conditions nsg lately, dx being hard to work. He has worked 13 countries with his TNT, input being 12 watts.

4RC is Qrl, building a three-stage Mopa. 4KX looking forward to some good fone. Qso's, on 80 mx, has just about completed the fone portion of his rig.

4WD reports Qrm from power leaks makes it impossible for him to work anybody. During the recent A.A.R.L. test both 4GK and 4UU seemed to be working the W's and VE's in grand style; the total points gained by 4GK were 6000 odd, and 4UU over 2000. 4TY is now located at "Sundown," Green Valley, via Jackson. Norm. is using a Ford coil for his plate supply. 3ML paid a hasty visit to VIB after Easter, and met some of the boys, also swapped quite a few yarns, hi. Our only regret is that Bob could not stay longer, as it was a sort of hello-good-bye visit. 4JW has been heard quite a lot recently, and certainly been making the old spark coil work overtime.

4RM been rebuilding his 200 mx gear, also getting fb reports from ZL, W. VE, etc., on 40 mx with his 2A3 as oscillator. 4WT recently put fone over to W8, report being Qsa 5 R5, quality good. Bill is using Telefunken modulation, and was sure excited when he heard this Yank station calling him. 4UK, of Toowoomba, been giving the dx a spell lately; has built an fb Electron coupled receiver. 4KH, of Wynnum, has got the ole shivery rock going at last; now putting out an fb T9 signal, and receiving very good reports.

4GU having trouble with BCL sets, so is Qrl building wave traps, key click filters, etc., to try and keep them quiet.

4JB now putting the finishing touches to his new xtal rig, which will be a fb job.

## VK5 (SOUTH AUST.)

The annual meeting of the Institute was held at the clubrooms on Wednesday, April 11. There were about 60 members present. It has always

been the custom in the past for this meeting to take the form of a social held at a restaurant, but this year it was held in the clubrooms instead.

The annual reports were read, and it is pleasing to report that although the Institute suffered a severe financial loss early in the year, through rigid economy it finished the year with a surplus. This reflected great credit upon the retiring council.

The chairman, 5RD, then declared all offices in the Institute vacant. Nominations were received, and an election of officers were held. Those elected were:—Mr. A. O. Richardson, 5YK, President; and Messrs. R. Bruce, 5BJ; M. Gray, 5SU; R. Hoskard, 5RH; M. Hider, Colin Howie, 5RF; W. Pitchford, 5WP; G. Ragless, 5GR; H. Roberts, 5MY; and K. Wadham, 5KW; members of the council.

The retiring president, Mr. R. D. Elliott, 5RD, in his address, thanked the council for the excellent work they did during the year, and for carrying the Institute through what was probably its most difficult year since its existence. He said there was a lot of new blood in the new council, and every confidence could be placed in their carrying on the good work done by the former one. The radio inspectors' department was also thanked for their co-operation and confidence in placing in the hands of the Institute the granting of 200 meter permits and the power to deal with interference complaints.

The new president, Mr. Richardson, in his address, said that the Institute had passed the crisis, and the way was now clear for it to go ahead and prosper as it did a few years ago. The club transmitter, 5WI, which had been off the air for the greater part of the year, would commence operations again. The frequency checks would be continued, and any amateur could get his accurate frequency by arranging a sked with 5WI. There had been a lot of controversy regarding the accuracy of the Institute's frequency meter, but it had been checked against American standards, and found to be accurate to within .01 per cent. The library was also to be enlarged, and subscriptions would be sent to leading European and American radio journals. In concluding, Mr. Richardson appealed to all hams not members to join up, and thus permit the Institute to represent the hams as a body instead of only a proportion.

Tribute was paid during the evening to the work of John McGee, our secretary. He took over the job at the most difficult time after being a member of the Institute for only a short time, and through his untiring work the books and other matters were remodelled, and were now an example of neatness and efficiency.

Conditions in VK5 up to 20/4/34 have been much the same as they were last month.

40 meters does not seem to have the usual kick in it, though it is certainly better than it was last month. QRN is much less, with the result that the majority of the usual DX stations can be heard. Plenty of EAs were heard during the Spanish test, but, although the local chaps called repeatedly, few QSOs were made.

20 meters is still patchy, though occasionally some good DX can be had down there.

With the coming of the winter more attention is being directed at 80 meters. Many of the hams are busy building rigs, and every week sees more and more stations up there. It should not be long before this band is once again a hive of activity.

The Easter holidays saw quite a number of the gang away from home. 5SU spent the time camping at Wellington on the River Murray.

At Victor Harbour the scribe ran in to 5RD, John McGee, our secretary, and quite a number of the second ops from the city.

Harry Wheeler, 5HW, and a friend toured the south-eastern portion of the State with a motor bike and sidecar. They said they had some difficulty in negotiating some of the sandy tracks they encountered. Harry is making an f.b. job of the elementary lectures he is giving at the Institute.

Harry Roberts, 5MY, has at last received the success he deserved—W.A.C. He recently clicked with HC1FG in Ecuador, and had a rag chew for 35 minutes. His sigs were reported QSA 5 R4, but the HC's sig was R8 in VK5. An 80 meter phone rig is contemplated for the winter months. One of the best notes on the air is 5LB's. Lionel's clean, crisp style of sending also makes it a pleasure to work this station. Dave Greenlees, an enthusiastic receiving member and well known to hams all over Australia as VK-DG, recently celebrated his twenty-first birthday.

All the hams wish him the best of luck on having gained his majority.

5RF, who recently went QRO, is thinking of going down on low power again. Colin received a report at the last meeting from U4BG, of Sverdlovsk, U.S.S.R. He was reported QSA 4 R4 cc. note—and this from a 6-watt Hartley with a 245. The Port Lincoln station, 5WJ, puts out a hefty signal on phone. He is often heard in the capital on Sunday mornings R max.

5KB has a strong P.D.C. sig. Long calls must be the order of this station. The other night he called a W1 over 30 times without signing. I counted 29 calls, but did not start to count until I grew tired of listening for his call. Even after this marathon call he did not click. Maybe the W1 went to sleep waiting for the signature. Half an hour later 5KB came on with renewed energy, and this time 37 calls were directed at a W5 before he disclosed his identity. Now there ought to be a law against that. 5MD has a nice 3-stage c.c. a la QST rig on the air, which puts out an f.b. note. The 200 meter transmissions from this station are still excellent. 5FM still pushes out a T9 note with tons of punch behind it. 5JA recently pierced the sky with a new 63 ft. 6 in. post at his new QRA at 21 Douglas street, Parkside. Transmitter in use at the present time is a two-stage c.c. job, with a 47 co., and freq. doubler and a 210 p.a.

5MZ has been working plenty of Ws on 40, and also ZLs on 20. Has a new 35-foot stick in the backyard now. Regular skeds with W3DLR is the only thing 5LD has to report. 5GC was on with a m.o.p.a. for a time. The note was not all that could be desired, so it was scrapped. 5RD has the rebuilding craze. Putting up three stage c.c. jobs to operate on all bands.

Two new 35-foot sticks have made their appearance at 5KL, with a consequent improvement in reports. 5JO has been off the air during the last month, but has not forsaken radio. He intends to go on 80 during the winter.

5RP is entertaining the BCL listener on 200 on Sundays. Bob uses a 50-watt bottle as a modulator, and the quality is f.b. 5WP is going to scrap his old 24-56 receiver in favour of s.s. super. 5RO, who has been QYL for some months, has found that

radio is the best friend after all. Bob made his reappearance on the air the other week with a three-stage c.c. rig. Receiver in use is an "Amateur Radio" 2-tube Electron coupled job.

## SIGS WITH TONE AND SIGS WITHOUT.

By QRZ.

First of all, I must say that our South Australian friend was a trifle early with his remarks in last month's "A.R." I refer him to the notes in that issue, which were written prior to receipt of his letter.

New T signals inaugurated through QRZ running short of descriptive adjectives:—

**T1 Power Leaks** (a bit worse than PAC).

3FL (a bit wobbly too).

2KE and 5BM, dead heat for champion award.

(5GC just missed the bus here by coming on with good PDC on the day these notes were written.)

**T2 PAC.**

2BJ only one heard in this class.

**T3 RAC** (numerous varieties).

(a) **Broad and rough.**

3KT, 7KV, ZL3DU, ZL4FT.

(b) **Ripply or rattly.**

5FB, 2DK.

(c) **Wobbly.**

4EL was chased around the 20 mx band before I got his call.

5MV.

(d) **Ord'nary** (almost respectable)

2AJ, with fb fist too.

2XM, 2QJ, 2KT, 4DO.

**T4 NDC** to PDC (not quite respectable).

2ZI chirpy NDC.

3FB wobbly PDC.

I wonder if I would get any abuse if, instead of writing about these chaps, I just called them and said my piece?

Congrats., 20H. Heard with fb PDC note.

5MW inclined to be a bit of an XU hound.

Heard 3BF on fone during DX hours, working 3DQ. Wasn't even good fone.

3CX could put an anchor on his tank coil or feeders, or something, by the sound of his note.

And now I must apologise to a station I accused of long CQ's. I actually heard W6AZC send 55 CQ's without signing. Can you beat it?

3FG had a funny sort of signal.

Before concluding I would like to say that these notes are not written with any personal vindictive feeling, but I really believe that I am expressing the general disapproval of the majority of VK hams, who like to hear decent signals.

73, etc.,

QRZ.

## AUSTRALIAN CALLS HEARD

between 18/11/33 and 28/2/34 at station ZSIH, "Oakvale," Oakhurst avenue, Rondebosch Cape, South Africa, are appended. Bracketed figures denote number of times station logged:—VK2, AH, BA, (3), NR, XU (2), JT, HW (4), OC (2), ZW (2), HC, JX (2), ER, VK3 HG, OW (3), TO, KX (2), OC (2), BQ, BJ, RJ (5), MR (4), GQ, WX, WL (5), VK4, RV (6), 4GK (5), WA, EL (2), BB (5), VK6FO (3), VK7JB (3), VK7CH, VK5, XK, DX, HW, RX, LX, MY, FM, GR (9), MU (2) LD (2), GW.

Heard by Miss Barbara Dunn, G6YL, England, January, 1934, 14MC, VK2NR, 3BJ, 3KX, 5JH. February, 1934, 7MC, VK2DY, VK2NG, 14MC, VK2, BA, ER, HW, NR, OC, PX, XU, ZH, VK3, BJ, GQ, HK, JJ, KX, MR, OC, RJ, WJ, WL, WY, VK4, BB, GK, RV, SM, VK5, FM, GR, LB, MU, VK6FO.

## VICTORIAN QSL BUREAU

Cards for the following stations and listeners are on hand at the above bureau, 23 Landale street, Box Hill, Victoria, and will be forwarded on receipt of stamped addressed envelope:—3BP, BR, CA, ER, FC, FM, GA, GU, GW, GX, JL, JN, JW, JY, KO, KQ, LP, NC, NG, NR, NT, OZ, PN, PZ, RN, RW, SK, UJ, VU, WK, WX, XO, XK, ZF, ZK, ZL, ZY. Messrs. Edgerton, Coghlan, Oliver, Henrickson, White, Nye, VKGH, VKHM, VKLY, Bennett, Lake, Mawman, VK3QSL.

According to a 28mc listener of long experience, this band should be worth a further tryout for DX at the present time, as signals from JND and XBO are coming through on 11 metres

at strengths between r5 to r7 every Sunday between 11 a.m. and 2 p.m. Melbourne time.

Hams taking "Island Cruises" touching Noumea should call on Charles Gaveau, 44 Rue de l'alma, where they will find some familiar equipment. At present the call is F8CVG. VK2YL has the honour of first QSO on January 25, whilst ever-consistent VK4GK had the second QSO. QSL manager VK2, James Corbin, is busy trying to fit out the Noumean with a correct prefix.

Hunter, of G2ZQ, complains that the following VK2 stations do not QSL, or rather, that is Hunter's experience of them:—VK2FQ (s'prised at you, Jack), VK2HQ, 2LX, 2LZ, 2PT, 2XU, 2XY, 2YR and 2ZW (look to it, Stan).

The second international DX com-

petition of the U.R.E. (Spain) took place during the week-ends from March 24 to April 8. VK stations contacting Spanish amateurs during this test should send a QSL card quoting the code number received from the EA station, to the U.R.E. Apartado, 262 Madrid, by July 8. VK's are reminded that a fine diploma is awarded by the U.R.E. to the leading foreign station in each country. VK3WL, winner for Australia last year, is justly proud of the magnificent diploma awarded him.

During a brief visit to Melbourne during the third week of April, VK2ZW, Stan Grimmett, of Newcastle, visited as many hams as his limited time would permit. Melbourne hams were extremely gratified to meet this well-known personality from the black country.

VK3RJ, R. E. Jones, QSL Manager.

## R.A.A.F. Wireless Reserve Notes



### VMC

Total No. of Messages **181**

Average per Station **11.25**



### VMC4

Total No. of Messages **53**

Average per Station **10.6**



### 7Z1

Total No. of Messages **51**

### FEDERAL NOTES BY THE C.O.

I was very fortunate this Easter in being able to personally visit another two Districts, namely, VMB and VMD. It has always been my firm belief that no other form of contact with a person can impress one more than a personal one. Letter writing and contacts over the air may establish a bond between two people, but there always lacks that "something" that is at once discovered when those two persons meet face to face. That is why the conventions that we have held to date have been such a success, not only from the Reserve point of view, but also from the point of view of the individuals in it. Every ham who has gone a mile or more to meet another brother realises that. When he returns home and again

contacts that ham, they are more free to talk; in other words, they have that better understanding. Many petty differences are always arising, just through a word out of place in a letter or a QSO, because the author of them just doesn't realise the type of man at the other end. Amateur radio throughout the world would be one hundred times more firmly united if we could all meet one another. Of course, that is impossible.

In the Reserve we can do such a thing. We can have an annual convention in each District. And what a time the fellows do have when they all gather in the city to spend a week in each other's company. The country member is the one who appreciates it most. He can come to "town" on many occasions alone, but seldom has

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the opportunity of associating with ALL those he has been contacting for months. VMC has shown the way, and has already had several happy annual conventions. It is to be hoped that other Districts will follow suit this year. An idea has been mooted that we should hold a gigantic convention in Melbourne during the Centenary in conjunction with Amateur Week. However, it remains to be seen what support is given to the suggestion which was broadcast to all members recently.

My visit to VMB proved very valuable, and afforded me an opportunity to give a talk to the majority of the metropolitan members on procedure and the Reserve organisation. 2Z1 and 2Z2 kindly arranged a meeting at 2Z2's shack, and a happy evening was spent clearing up some doubtful points. It was very gratifying to come away and feel that those present were filled with enthusiasm, and had a better knowledge of their duties, which will certainly spread to those who could not attend. In VMD I had the privilege of meeting 4Z1 and many W.I.A. men, and attended their annual meeting. Great interest was shown in a chat on the workings of the Reserve, and I again left with the feeling that the personal visit had promoted a better understanding.

The Reserve will certainly be called upon to co-operate in the Centenary Air Race next October, and plans are being drawn up to see if it is possible to give everyone something to do, although the work mainly rests with the Eastern States. Further announcements will be made as soon as we know what is expected of us.

## THIRD DISTRICT NOTES. (VK3UK—3ZL)

The two new sections which have been formed have not yet commenced active work, due mainly to the fact that some of the members are not quite ready to start up. It is very much easier if every member in a section is starting off from the scratch mark together; if some start before others there is a tremendous amount of leeway to make up before all are on an even standard of efficiency.

VK3GC, one of our new stations, is transferring from Camperdown to Bairnsdale, and we wish him all possible luck in his new location. It is great news to hear that he is moving to Gippsland, as there has been a dearth of amateurs in that vitally important part of the State. 3C4 is our only active station down there at present, but there are a number of new hams in this region, and we have hopes of Gippsland being very well represented in the future.

3C4 was instrumental in putting over some great work, and handling a quantity of traffic when a Southampton made a forced landing in Lake Reeve, quite close to his QRA. 3D4, who is on a cruise to Java and the Islands, is apparently having a wonderful time, and has been able to meet a number of the VME and VMF boys as he passed through.

Our Commanding Officer, 1A1, is leaving shortly for New Zealand, and will be absent some months, so we hear. All members of VMC join with me in wishing him all success and good luck. We will keep a look-out for him from the ZL's, and perhaps he will be able to join in with our

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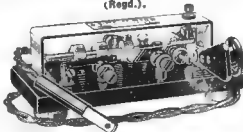
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3.5 mc nightly fone QSO's during the winter. 3Z1 has not yet re-erected his gear in the new QRA, and in consequence has been out of touch with schedules this month. VMC has been running under the very able guidance of 3Z2.

We hear we are being fortunate enough to be getting three of VMG's crack operators into our ranks. Whilst commiserating with VMG in their loss of such fine stations, we cannot help congratulating ourselves on our gain. Welcome 7CH, 7OD and the new 3CS, and may you all have as happy and enjoyable a time as VMC members as we all have.

As this is Melbourne's Centenary year we want to make our convention an outstanding one, and to have as many Interstate members over for convention week as possible. Plans are proceeding apace, and next month we will be able to tell you the dates, so that Interstate stations can make their plans accordingly to make their trip to VIM coincide with the convention. We venture to say that at no other time will one be able to meet so many hams together in Melbourne.

## FIFTH DISTRICT NOTES.

By 5Z1 (VK5SU).

The Reserve is beginning to make headway now, and more members are active.

5MY and 5RH have been active and are watching every mail for notification of their enrolment. 5A2, at Alice Springs, has not been able to hear the broadcasts on 80 mx, and it is probable that the first section will shift to 7317 kcs. in the near future. Three broadcasts have now been given, but many members of both sections have yet to make their appearance at this watch.

It is hoped that all members will devote some time each day to the mastering of their training manual.

Just think, chaps, how wonderful it would be to have all that procedure in your head, and not have to jump for the manual every time some other chap tries to trick you with some knotty point in the procedure that he has just learnt.

Another letter is to be forwarded to each member explaining fully the working of the reserve, and outlining schedules, etc. It is hoped that you will co-operate and keep all schedules,

and perhaps one month when the VMC chaps are unwary we may capture the traffic totals.

3D4 passed through Adelaide recently, and was shown around by 5MY and 5Z1.

## SIXTH DISTRICT NOTES.

By 6Z1-6MN.

Since last month another call sign has come along, namely 6A2, and Jack Mead paraded on the air on the first of the month—a full-blown member. Commencing in May, this District will be making a shift to 80 metres for training. On Easter Monday 3A4 passed through Perth on his way to the East on a holiday jaunt. Unfortunately 6Z1 was absent from town, and the job of showing 3A4 around was left in the hands of 6Z2, who made him known to many other lads. VK6FM has come to life again after being off the air for five months owing to the hot weather, and has sent in an application for membership. VK6BO complains that several newly-installed refrigerators have made reception unbearable at times for him in Carnarvon. However, that has not stopped him sending in an application for membership. The new training manual has been received with acclamation and delight. 6Z1 was off the air for 14 days owing to duties at the local B station, but greatly prefers amateur radio! VK6LR, RW, RA, etc., are awaiting call signs. VK6FL passed through Perth for Albany, where he is going to be very helpful in the Reserve network.

Traffic Totals.—6Z1, 35; 6Z2, 3; 6A2, 8; 6RA, 25.

## SEVENTH DISTRICT NOTES.

By 7Z1-7RC.

With only four members in VMG at present, little work has been carried out. However, those four have received the new training manual and are getting into shape with relaying, etc.

VMG1 have only two members, the S/L and 7A2, and VFG2 only one, 7B1. VK7CH has been keeping watch for 7B1, and is enrolling, also VK7NC, VK7AH, and we have hopes of VK7JH.

Very little active work in the way of traffic handling has been done in VMG1 owing to lack of members. 7A1 has been busy with a new speech

amplifier, using a pair of 2A3's. 7A2 has handled a little traffic, and VK7LZ is still waiting to be sworn in.

In VMG2 the weekly B/C's have been copied by VK7AH and VK7NC, but owing to their not knowing any procedure at all they are at a big disadvantage and cannot handle traffic. VK7CH has handled and relayed all the traffic for 7B1, while 7B1 was on holidays.

Just prior to these notes being written word was received from VK7CH that he has been transferred to Melbourne, and will be leaving almost immediately, so that makes our list of active stations even less than before. Although not sworn in yet, VK7CH was one of our foremost operators, having been in the Reserve some years ago, and could put that traffic through very smartly indeed. Two of our members have now gone to Melbourne to reside, and they are both a distinct loss to VMG. VK7CH is not taking any gear with him for the present, as he is not sure of his movements for a while, but hopes to get on the air later from VMC. and will probably join up again with the Reserve in VMC. You will have all of our good operators shortly, VMC!

It had been planned to have a contest before June, and present the winner of it with a silver cup at the annual W.I.A. dinner and meeting, to be held in June; but that appears to be impossible now owing to losing two members.

Traffic Totals.—7A1, 34; 7A2, 17; 7Z1, 51; 7CH, 13.

## HARMONIC

A 240 volt 15 watt lamp may be used as an emergency plate milliammeter. A Philips pilot lamp will start to glow when passing 10 mills, and will reach full brilliancy at 60 mills. Don't leave it in circuit permanently, however, as the voltage drop is considerable.—VK3AH.

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—VK3AH.

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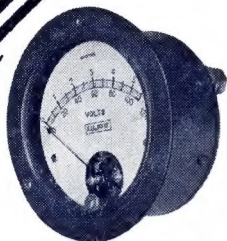
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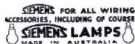
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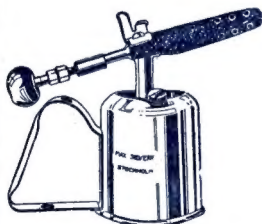
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